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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,714	02/12/2004	Ryan C. Kinter	MIPS.0190-00-US	5931

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EXAMINER

SCHLIE, PAUL W

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/777,714	Applicant(s) KINTER ET AL.	
	Examiner Paul W. Schlie	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-55 have been examined.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 50 and 52 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter; as an executable program providing correspondingly claimed functionality must be claimed as being embodied within a computer readable storage medium if otherwise not claimed as being within an inherently enabling embodiment.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 27, 33, 51-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Peng et al. (5,680,566).

As per independent claims 1, 27, 33 and 51-53, Peng et al. teaches a processing system and/or method comprising: a translation look-aside buffer (TLB), and the corresponding means to determine upon a request to lookup and/or modify entries in said TLB which both match a given tag (itself comprising an virtual page address and/or

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other identifiers) and are indicated as being valid, such that upon the detection of more than one such entries, all such entries exclusive of any entries designated to be modified/written, will have their validity indicators cleared to a predetermined value, thereby effectively preventing duplicate matching entries by inhibiting their utilization in subsequent such tag match/comparisons operations (see abstract, column 3 lines 23-32 and 56-67, and column 4 lines 41-46).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-26, 28-32, 34-50, 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng et al. (5,680,566) in further in view of MIPS ("MIPS 324K™ Processor Core Family Software User's Manual" Sept. 25 2002).

As per claims 2-26, 28-32, 34-50 and 54-55 being dependent on claim 1, 27, 33, 53, or correspondingly dependent claim inclusively, where although Peng et al. further teaches that it would be desirable to detect and take appropriate actions in response to various anomalous situations that may exist with respect to TLB entry lookups and/or maintenance (see column 3 lines 23-32); Peng et al. does not explicitly teach that such situations may be handled in software via correspondingly generated exceptions, that the valid indicator may or may not be user accessible and/or programmable, that the TLB may be disabled ("TLB Shutdown") upon the condition that two otherwise matching

valid entries had been written to the TLB, that a sub-portion of a tag field may be optionally included and/or excluded from a tag match operation (where such sub-portions of the tag field may represent an address space identifier and/or be a function of an address region's page size), that all entries may be invalidated upon a reset request, that the victim entry to be written may be selected pseudo-randomly, or a program accessible I/O interface to said TLB entries and/or control logic; however these are taught by MIPS (see figure 3-9, and sections 3.4 and 6.2-2; and although not cited as the basis of the rejection, most are correspondingly also taught by Mehring et al. 5,222,222 for reference). Therefore it would have been obvious to combine that taught by Peng et al. with that taught by MIPS relevant to the claims to enable an exception driven computer program executed by a processor to provide TLB entry maintenance functionality otherwise inherently requiring dedicated hardware. Any limitation not otherwise considered explicitly addressed is correspondingly considered obviously inherent in that taught, clearly obvious to one of ordinary skill in the art, and/or not sufficient to patentably distinguish over prior art.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765, or whose email address is [paul.schlie@uspto.gov]. The examiner can normally be reached on Mon-Thu 8:00-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PRIMARY EXAMINER
2/24/06